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Substitute for form 1449A/PTO		<b>Complete if Known</b>	
 <p><b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b></p> <p>(use as many sheets as necessary)</p>		<b>Application Number</b>	<b>09/993,917</b>
		<b>Filing Date</b>	<b>November 27, 2001</b>
		<b>First Named Inventor</b>	<b>STARK, Moshe</b>
		<b>Group Art Unit</b>	<b>2621</b>
		<b>Examiner Name</b>	<b>SAUNDRA BALLENGER</b>
		<b>Attorney Docket Number</b>	<b>P-3236-US</b>
Sheet 1 of 1			

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Examiner Signature		Date Considered	10/28/2004
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**Complete If Known**

<b>Application Number</b>	<b>09/993,917</b>
<b>Filing Date</b>	<b>November 27, 2001</b>
<b>First Named Inventor</b>	<b>STARK, Moshe</b>
<b>Group Art Unit</b>	<b>2621</b>
<b>Examiner Name</b>	<b>SAUNDRA BALLENGER</b>
<b>Attorney Docket Number</b>	<b>P-3236-US</b>

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Sheet 1 of 1

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<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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Application Number	09/993,917
Filing Date	November 27, 2001
First Named Inventor	STARK, Moshe
Group Art Unit	2621
Examiner Name	SAUNDRA BALLENGER
Attorney Docket Number	P-3236-US

*(use as many sheets as necessary)*

Sheet	1	of	1
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## U.S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

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**Examiner  
Signature**

Date  
Cons

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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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<div style="border: 2px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold;">             U.S. PATENT &amp; TRADEMARK OFFICE           </div> <div style="text-align: center;">             INFO AUG 05 2002           </div> </div>		Application Number	09/993,917
		Filing Date	November 27, 2001
		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	Unknown
		Attorney Docket Number	P-3236-US
Sheet	1 of 4		

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
AS	AA	5,471,515		Fossum et al.	November 28, 1995	
AS	AB	5,049,752		Kalaf et al.	September 17, 1991	
AS	AC	5,721,425		Merril	February 24, 1998	
AS	AD	5,369,047		Hynecek	November 29, 1994	
AS	AE	5,949,483		Fossum et al.	09-07-1999	
AS	AF	09/426,452		Stark	10-25-1999 (filing date)	
AS	AG	09/516,168		Stark	02-29-2000 (filing date)	
AS	AH	09/629,703		Stark	07-31-2000 (filing date)	
AS	AI	09/993,886		Stark	11-27-2001 (filing date)	
AS	AJ	4,471,228		Nishizawa et al.	09-11-1984	ALL
AS	AK	4,635,126		Kinoshita et al.	01-06-1987	Column 3, line 8-column 6 line 59
AS	AL	4,761,689		Takatsu et al.	08-02-1988	ALL
AS	AM	4,583,002		Kondo et al.	04-15-1986	ALL
AS	AN	4,984,002		Kokubo	01-08-1991	ALL
AS	AO	5,546,127		Yamashita et al.	08-13-1996	Column 7 line 6-column 10 line 48
AS	AP	5,541,654		Roberts	07-30-1996	ALL
AS	AQ	5,576,762		Udagawa	11-19-1996	ALL
AS	AR	5,638,123		Yamaguchi	06-10-1997	Column 6 line 53- column 10 line 43
AS	AS	5,638,120		Mochizuki	06-10-1997	ALL
AS	AT	5,877,808		Iizuka	03-02-1999	ALL
AS	AU	6,122,008		Komobuchi et al.	09-19-2000	ALL
AS	AV	6,141,049		Harada	10-31-2000	ALL
AS	AW	5,539,461		Andoh et al.	07-23-1996	Figs. 3A-3B, column 14, lines 25-40
AS	AX	5,485,004		Suzuki et al.	01-16-1996	Figs. 1-2, column 6, lines 15-40, column 7, lines 30-35, column 8, lines 8-65
AS	AY	3,911,467		Levine et al.	10-07-1975	ALL
AS	AZ	4,942,473		Zeevi et al.	07-17-1990	ALL
AS	BA	5,262,871		Wilder et al.	11-16-1993	ALL
AS	BB	5,278,660		Sugiki	01-11-1994	ALL

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		Filing Date	November 27, 2001
		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	Unknown Technology Center 2600
		Attorney Docket Number	P-3236-US
Sheet	2	of	4

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
as	BC	FOSSUM et al., "Application of the Active Pixel Sensor Concept to Guidance and Navigation", SPIE, Vol. 1949, paper 30, 1993	<input type="checkbox"/>
as	BD	ROGER PANIACCI et al., "Programmable multiresolution CMOS active pixel sensor", 72/SPIE, Vol. 2654, 1996, pp. 72-79	<input type="checkbox"/>
as	BE	ZHIMIN ZHOU et al., "Frame Transfer CMOS Active Pixel Sensor with Pixel Binning", IEEE Transactions on Electron Devices, Vol. 44, No. 10, October 1997, pp. 1764-1768	<input type="checkbox"/>
as	BF	LISA G. McILRATH et al., "Design and Analysis of 512X768 Current-Mediated Active Pixel Array Image Sensor", IEEE Transactions on Electron Devices, Vol. 44, No. 10, October 1997, pp. 1706-1715	<input type="checkbox"/>
as	BG	R. DANIEL McGRATH et al., "Current Mediated, Current-Reset 768X512 Active Pixel Sensory Array", ISC97/Session 11/Imaging Circuits and Systems/Paper FA 11.2, p. 182-183	<input type="checkbox"/>
as	BH	CHIH-CHENG HSEIH et al., "A new Cryogenic CMOS Readout Structure for Infrared Focal Plane Array", IEEE Journal of Solid-State Circuits, Vol. 32, No. 8, August 1997, pp. 1192-1199	<input type="checkbox"/>
as	BI	NANYOUNG YOON et al., "A New Unit Cell of Current Mirroring Direct Injection Circuit for Focal Plane Arrays", SPIE, Vol. 3061, pp. 93-101	<input type="checkbox"/>

Examiner Signature		Date Considered	10/27/2004
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		Filing Date	November 27, 2001
		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	Unknown
		Attorney Docket Number	P-3236-US Technology Center 2600
Sheet	3	of	4

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
aw	BJ	J. R. WILLISON, "Signal Detection and Analysis", Handbook of optics, Vol. 1, Part 6, Chapter 18, McGraw Hill, 1995	<input type="checkbox"/>
ar	BK	T. J. TREDWELL, "Visible Array Detectors", Handbook of Optics, Vol. 1, Part 6, Chapter 22, McGraw Hill, 1995	<input type="checkbox"/>
ar	BL	L. J. KOZLOWSKY AND W. F. KOSONOCKY, "Infrared Detector Arrays", Handbook of Optics, Vol. 1, Part 6, Chapter 2, McGraw Hill, 1995	<input type="checkbox"/>
ar	BM	ERIC R. FOSSUM AND BEDABRATA PAIN, "Infrared Readout Electronics for Space Science Sensors: State of the Art and Future Directions", SPIE, Vol. 2020, Infrared Technology XIX (1993), pp.262-285	<input type="checkbox"/>
ar	BN	Orly Yadid Pecht et al.: "Optimization of Noise and Responsivity in CMOS Active Sensors for Detection of Ultra Low Light Levels", SPIE Vol. 3019, 0277-786X/97, pp.125-136	<input type="checkbox"/>
ar	BO	Eric R. Fossum - "Ultra Low Power Imaging Systems Using CMOS ImageSensor Technology", SPIE Vol. 2267, 0-8194-1591-X/94, pp. 107-111	<input type="checkbox"/>
ar	BP	Eric R. Fossum: "Active Pixel Sensors: Are CCD's Dinosaurs?", SPIE Vol. 1900, 0-8194-1133-7/93, pp. 2-14	<input type="checkbox"/>
ar	BQ	Wolfgang Wittenstein et al: "Simulation Study on Fixed Pattern Noise and MRTD", SPIE Vol. 2552, 0-8194-1911-7/95, pp. 489-501	<input type="checkbox"/>

Examiner Signature		Date Considered	6/27/2004
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		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	Unknown
		Attorney Docket Number	P-3236-US
Sheet	4	of	4

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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as	BR	E. Mottin et al.: "An Improved Architecture of IRFPA Readout Circuits", SPIE Vol. 3061, 0277-786/97, pp. 117-126	<input type="checkbox"/>
as	BS	B. Pain et al.: "Low-Power, Low-Noise Analog Circuits for on Focal-Plane Signal Processing of Infrared Sensors", in Infrared Detectors and Instrumentation, Pro. SPIE, Vol. 1946, pp. 365-374, 1993	<input type="checkbox"/>
as	BT	Steven Decker et al.: "A 256 X 256 CMOS Imaging Array with Wide Dynamic Range Pixels and a Column-Parallel Digital Output", IEEE Journal of Solid-State Circuits, Vol. 33, No. 12, December 1998, pp. 2081-2091	<input type="checkbox"/>
as	BU	Chih-Cheng et al.: "A new CMOS Readout Circuit Design for IRFPA with Adaptive Gain Control and Current-Mode Background Suppression", 0703-3073-0/96, 1996 IEEE, pp. 137-140	<input type="checkbox"/>
as	BV	Hon-Sum Wong: "Technology and Device Scaling Considerations for CMOS Imagers", IEEE Transactions on Electron Devices, Vol. 43, No. 12, December 1996, pp. 2131-2142	<input type="checkbox"/>
as	BW	Hon-Sum Wong et al.: "CMOS Active Pixel Image Sensors Fabricated Using a 1.8V, 0.25 gm CMOS Technology", 0-7803-3393-4, 1996 IEEE, IEDM 96-915, pp. 35.5.1-35.5.4	<input type="checkbox"/>

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as	AA	5,452,004		Roberts	09-19-1995	
as	AB	5,841,126		Fossum et al.	11-24-1998	
as	AC	4,472,638		Nishizawa et al.	09-18-1984	
as	AD	5,694,495		Hara et al.	12-02-1997	
as	AE	6,166,367		Cho	12-26-2000	
as	AF	6,091,449		Matsunaga et al.	07-18-2000	
as	AG	6,115,065		Yadid-Pecht et al.	09-05-2000	
as	AH	5,481,301		Cazaux et al.	01-02-1996	
as	AI	5,896,172		Korthout et al.	04-20-1999	
as	AJ	5,351,309		Lee et al.	09-27-1994	
as	AK	5,856,667		Spirig et al.	01-05-1999	
as	AL	6,078,037		Booth, Jr.	05-20-2000	
as	AM	5,264,944		Takemura	11-23-1993	
as	AN	5,541,402		Ackland et al.	07-30-1996	
as	AO	5,576,763		Ackland et al.	11-19-1996	
as	AP	5,739,562		Ackland et al.	04-14-1998	
as	AQ	5,835,141		Ackland et al.	11-10-1998	
as	AR	5,841,159		Lee et al.	11-24-1998	
as	AS	5,881,159		Aceti et al.	03-09-1999	
as	AT	4,758,734		Uchida et al.	07-19-1988	
as	AU	5,854,498		Merrill	12-29-1998	
as	AV	5,227,313		Gluck et al.	07-13-1993	
as	AW	5,291,294		Hirota	03-01-1994	
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as	AY	5,060,245		Nelson	10-22-1991	
as	AZ	5,396,091		Kobayashi et al.	03-07-1995	
as	BA	5,650,352		Kamasz et al.	07-22-1997	
as	BB	6,300,977		Waechter et al.	10-09-2001	
as	BC	5,742,659		Atac et al.	04-21-1998	

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as	BD	WO	97/17800		Yadid-Pecht et al.	05-15-1997		<input type="checkbox"/>

Examiner Signature		Date Considered	11/27/2004
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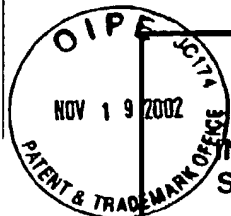
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cb	BE	Orly Yadid-Pecht et al. "Wide Intrascene Dynamic Range CMOS APS Using Dual Sampling," <i>IEEE Trans. On Electron Devices</i> , Vol. 44, No. 10, Oct. 1997, pp. 1721-1723	<input type="checkbox"/>
af	BF	Orly Yadid-Pecht et al., "CMOS Active Pixel Sensor Star Tracker with Regional Electronic Shutter," <i>IEEE Journal of Solid State Circuits</i> , Vol. 32, No. 2, Feb. 1997, pp. 285-288	<input type="checkbox"/>
av	BG	Orly Yadid-Pecht et al., "Wide Dynamic Range APS Star Tracker," <i>SPIE</i> , Vol. 2654, 1996, pp. 82-92	<input type="checkbox"/>
af	BH	Christopher Clark et al., "Application of APS Arrays to Star and Feature Tracking Systems," <i>SPIE</i> , Vol. 2810, 1996, pp. 116-120	<input type="checkbox"/>
av	BI	Orly Yadid-Pecht et al., "A Random Access Photodiode Array for Intelligent Image Capture," <i>IEEE Transactions on Electron Devices</i> , Vol. 28, no. 8, Aug. 1991, pp. 1772-1780	<input type="checkbox"/>
av	BJ	Sarit Chen et al., "Adaptive Sensitivity CCD Image Sensor," <i>SPIE</i> , Vol. 2415, 1995, pp. 303-309	<input type="checkbox"/>
av	BK	G.P. Weckler, "Operation of p-n Junction photodetectors in photon flux integration mode," <i>IEEE JSSC</i> , vol. SC-2, no. 3, Sept. 1967	<input type="checkbox"/>
av	BL	R. Dyck and G. Weckler, "Integrated arrays of silicon photodetectors for image sensing," <i>IEEE Trans. Electron Devices</i> , vol ED-15, no. 4, April 1968 196-201	<input type="checkbox"/>

Examiner Signature	<i>Anty L...</i>	Date Considered	10/28/2004
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ao	BM	J.I. Nakamura et al., "CMOS active pixel image sensor with simple floating gate pixels," <i>IEEE Trans. Electron Devices</i> , Vol. 42, No. 9, Sept, 1995, pp. 1693-1694	<input type="checkbox"/>
ao	BN	E-S Eid et al., "A 256 x 256 CMOS active pixel image sensor," <i>SPIE</i> , vol. 2415, Sept. 1995	<input type="checkbox"/>
ao	BO	H. Yamashita et al., "A 2/3-In 2 million pixel STACK-CCD HDTV Imager," <i>IEEE JSSC</i> , Vol. 30, no. 8, August 1995, pp. 881-889	<input type="checkbox"/>
ao	BP	R.H. Nixon et al., "256 x 256 CMOS active pixel sensor camera-on-a-chip," <i>IEEE JSCC</i> , Vol. 31, No. 12, December 1996	<input type="checkbox"/>
ao	BQ	B. Dierickx et al., "Random addressable active pixel image sensors," <i>SPIE</i> , vol. 2950, August 1996, pp. 2-7.	<input type="checkbox"/>
ao	BR	D. Scheffer et al., "Random addressable 2048 x 2048 active pixel image sensor," <i>IEEE Trans. Elec. Devices</i> , Vol. 44, no. 10, Oct. 1997, pp. 1716-1720.	<input type="checkbox"/>
ao	BS	T. Nomoto et al., "A 4M-pixel CMD image sensor with block and skip access capability," <i>IEEE Trans. Electron. Devices</i> , vol. 44, no. 10, Oct. 1997, 1738-1746	<input type="checkbox"/>

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Substitute for form 1449B/PTO		<b>Complete if Known</b>	
		Application Number	09/993,917
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Filing Date	November 27, 2001
		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	BALLENGER, Technology Center 2600
Sheet	4 of 4	Attorney Docket Number	P-3236-US

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Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
ar	BT	Y. Iida et al., "A 1/4-inch 330k square pixel progressive scan CMOS active pixel image sensor,"  IEEE JSSC, vol. 32, no. 11, Nov. 1997, pp. 2042-2047	<input type="checkbox"/>
ar	BU	S. Ohsawa et al., "Analysis of low fixed pattern noise cell structures for photconversion layer  overlaid CCD or CMOS image sensors," IEEE Trans. electron. Devices, vol. 44, no. 10, Oct. 1997	<input type="checkbox"/>
ar	BV	S. Kemeny et al., "CMOS active pixel sensor array with programmable multiresolution readout,"  JPL, California Institute of Technology, 1994	<input type="checkbox"/>
ar	BW	Chamberlain S.G. and Lee J.P., "A Novel Wide Dynamic Range Silicon Photodetector and Linear  Imaging Array", IEEE Transactions on Electron Device, Vol. Ed. 31, No. 2, February 1984, pp. 175 -  182.	<input type="checkbox"/>
ar	BX	Delbruck T. and C. Mead, "Analog VLSI Phototransduction by Continuous-Time, Adaptive,  Logarithmic Photoreceptor Circuits", Tech. Rep. California Institute of Technology, Pasadena  California 91125, 1994. URL: <a href="http://www.pcmp.caltech.edu/anaprose/tobi/recep/">http://www.pcmp.caltech.edu/anaprose/tobi/recep/</a>	<input type="checkbox"/>

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